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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,176	03/05/2002	Charles Patton	5181-84600	9947

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EXAMINER
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HARRISON, CHANTE E

ART UNIT	PAPER NUMBER
2672	6

DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/091,176

Applicant(s)

PATTON, CHARLES

Examiner

Chante Harrison

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Derek Lentz, U.S. Patent 5,515,494, 5/1996 and further in view of Jerome Duluk et al., U.S. Patent 6,552,723 B1 4/2003.

As per dependent claim 1, Lentz discloses a method for comparing a pixel against one or more windows, the method comprising: passing said pixel data (); computing window result in each computation, wherein each computation corresponds to one of said one or more windows (i.e. a test of each window is performed to determine the window's visibility and the inclusion of pixels with the window) (col. 11, ll. 35-42), wherein said window result comprises an indication of inclusion of said pixel within the corresponding one of said one or more windows (i.e. the computation goes on to determine pixel inclusion after determining the window visibility) (col. 12, ll. 23-35); outputting a window word (i.e. inclusion result) from each computation, wherein said outputting said window word comprises, for each of computation except for a last computation, passing said window word to next computation, (i.e. data for included

pixels are passed to a frame buffer) (col. 6, ll. 23-25); and examining said window word available in the last computation (col. 10, ll. 55-65).

Lentz fails to specifically disclose using a pipeline, wherein said pipeline comprises two or more pipeline segments and wherein said window word comprises said window result and previous window result, which Duluk discloses (abstract; col.9, ll. 35-45; col.10, ll.12-21).

Lentz teaches performing multiple pixel operations to determine window visibility and pixel inclusion within the visible windows; and successively writing the pixel bits that are included in visible windows to a frame buffer.

Duluk discloses a pipeline having stages that receive primitive data, which includes point data, and compute primitive/point inclusiveness within a window/tile based on tile coordinates.

It would have been obvious to one of skill in the art to incorporate a pipeline having multiple segments that receive pixel data and determine pixel inclusiveness within a window and pass the results of both to the next pipeline segment with the disclosure of Lentz because Lentz teaches performing multiple pixel operations and passing the data to a frame buffer, which compares to the graphics processing of a pipeline in that a pipeline successively performs any of multiple operations on graphics data and passes the resulting data to a frame buffer.

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As per dependent claims 2 and 9, Lentz discloses said pixel comprises a horizontal and a vertical coordinate that define position of said pixel on a screen (i.e. bits represent pixel coordinates) (col. 1, ll. 38-45) in view of Duluk.

As per dependent claims 3 and 10, Lentz discloses each of said one or more windows comprises a first horizontal and a second horizontal coordinate and a first vertical and a second vertical coordinate that define boundaries of each of said one or more windows on the screen (Fig. 5; col. 9, ll. 55-65) in view of Duluk.

As per dependent claims 4 and 11, Lentz discloses computing horizontal inclusion by computing if said horizontal pixel coordinate is located between the first horizontal and the second horizontal coordinate of each of said one or more windows; and computing vertical inclusion if said vertical pixel coordinate is located between the first vertical and the second vertical coordinate of each of said one or more windows (i.e. window clip boundary coordinates are defined and window visibility is determined; upon a window passing a visibility test, pixels are tested to determine whether they are included in the window) (col. 6, ll. 20-22; col. 9, ll. 55-65; col. 11, ll. 4-11) in view of Duluk.

As per dependent claims 5 and 12, Lentz discloses setting said indication of inclusion of said pixel to positive if both said horizontal and vertical inclusions are true, and setting said indication of inclusion of said pixel negative if one or more of said horizontal and vertical inclusions are false (i.e. bits/pixels that are unobscured, e.g.

visible and included, are written to the buffer as all ones, e.g. positively; and bits/pixels that are obscured, e.g. not visible and not included, are written to the buffer oppositely, as zeros, e.g. negatively) (Fig. 7 "712"; col. 11, ll. 28-34) in view of Duluk.

As per dependent claims 6, 13 and 16, Lentz discloses previous window result comprises one or more previous window results (i.e. compare current pixel window location to previous stored foreground pixels that are visible window results) (col. 6, ll. 24-36) in view of Duluk.

As per dependent claims 7, 14 and 17, Lentz discloses clipping said pixel after said examining determines that said pixel is not included in any of said one or more windows (col. 5, ll. 16-20); propagating said pixel after said examining determines that said pixel is included in at least one of said one or more windows (col. 5, ll. 15-18; col. 11, ll. 13-15); wherein said one or more windows comprise one or more 2-D window (abstract; Fig. 4) in view of Duluk.

As per independent claim 8, Lentz discloses a method comprising: supplying window boundary coordinates for a plurality of windows (col. 9, ll. 49-55), wherein each segment of the computation corresponds to one of said windows (i.e. a test of each window is performed to determine the window's visibility and the inclusion of pixels with the window) (col. 11, ll. 35-42); each computation stage determining if a corresponding pixel is included in the corresponding window (i.e. the computation goes on to

determine pixel inclusion after determining the window visibility) (col. 12, ll. 23-35), and passing the corresponding pixel and a result of said inclusion determination to a next segment of the computation (i.e. data for included pixels are passed to a frame buffer) (col. 6, ll. 23-25).

Lentz fails to specifically disclose supplying data to a computational pipeline having stages corresponding to the windows, which Duluk discloses (abstract; Fig. 2; col. 4, ll. 45-55).

Lentz teaches performing multiple pixel operations to determine window visibility and pixel inclusion within the visible windows; and successively writing the pixel bits that are included in visible windows to a frame buffer.

Duluk discloses a pipeline having stages that receive primitive data, which includes point data, and compute primitive/point inclusiveness within a window/tile based on tile coordinates.

It would have been obvious to one of skill in the art to incorporate a supplying data to a computational pipeline having stages corresponding to the windows with disclosure of Lentz because Lentz teaches performing multiple pixel operations and passing the data to a frame buffer, which compares to the graphics processing of a pipeline in that a pipeline successively performs any of multiple operations on graphics data and passes the resulting data to a frame buffer.

As per independent claim 15, Lentz discloses a system for determining inclusion of a pixel with respect to each of one or more windows, wherein the pixel comprises a

horizontal and a vertical coordinate, wherein each of said one or more windows comprises a first horizontal and a second horizontal coordinate and a first vertical and a second vertical coordinate that define boundaries of each of said one or more windows in a two-dimensional space, the system comprising: a computation for: (a) receive the horizontal and vertical coordinates of the pixel (i.e. each pixel is represented by bits that are relative to a plane that is provided to the system) (col. 1, ll. 38-42; col. 3, ll. 15-25), (b) compute a window result indicating whether or not said pixel is located within said corresponding window (col. 12, ll. 23-35), and (c) pass the horizontal and vertical coordinates of the pixel and the window result to a next one of the computations (col. 6, ll. 23-25).

Duluk discloses a pipeline having two or more pipeline segments (Fig. 2), wherein each one of said two or more pipeline segments corresponds to one of said one or more windows (col. 4, ll. 45-55), wherein each one of said two or more pipeline segments, except for a last of said two or more pipeline segments receives pixel coordinates (col. 8, ll. 20-30), determines the window result and passes both to the next one of the two or more pipeline segments (abstract; col. 9, ll. 35-45; col. 10, ll. 12-21), which Lentz fails to specifically disclose.

Lentz teaches performing multiple pixel operations to determine window visibility and pixel inclusion within the visible windows; and successively writing the pixel bits that are included in visible windows to a frame buffer.



Duluk discloses a pipeline having stages that receive primitive data, which includes point data, and compute primitive/point inclusiveness within a window/tile based on tile coordinates.

It would have been obvious to one of skill in the art to incorporate a pipeline having multiple segments that receive pixel data and determine pixel inclusiveness within a window and pass the results of both to the next pipeline segment with the disclosure of Lentz because Lentz teaches performing multiple pixel operations and passing the data to a frame buffer, which compares to the graphics processing of a pipeline in that a pipeline successively performs any of multiple operations on graphics data and passes the resulting data to a frame buffer.

**Conclusion**

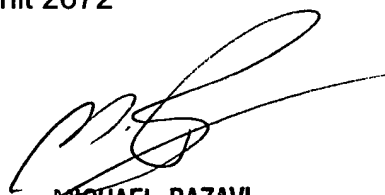
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chante Harrison whose telephone number is 703-305-3937. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on 703-305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chante Harrison  
Examiner  
Art Unit 2672

March 17, 2004



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